Abstract

A prediction type electronic thermometer having an actively controlled heater element thermally isolating the probe tip from the probe shaft. Rapid and accurate temperature measurements are made using predictive algorithms. Control circuitry reads input from the temperature sensing element to compute best heater control signals so that the temperature of the probe shaft rapidly follows changes in the temperature of the probe tip. Thermal isolation between probe shaft and tip impedes heat flow from the heater element to the tip providing more accurate measurements. Rapid and accurate management of shaft temperature allows heat from the patient being measured to be most efficiently transmitted to the temperature sensor element resulting in very fast temperature measurements.